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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT M. COLEMAN

Appeal 2007-3121
Application 10/024,727
Technology Center 2600

Decided: January 29, 2008

Before KENNETH W. HAIRSTON, ROBERT E. NAPPI, and
KARL D. EASTHOM, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) of a final rejection of claims 1-13 the only claims remaining in the application on appeal.

We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Appellant claims a printing method that includes a user interface for associating printer-independent print-quality characteristics with a selected

image element, and a printer control device for associating printer-dependent imaging actions with the printer-independent print-quality imaging actions.

Claim 1 is representative of the claims on appeal:

1. A printing system for printing a document having at least one page described in a page description language, comprising:

a printer;

a page description language decomposer for converting the document data into at least one image object;

a user interface having a first option for associating printer-independent print-quality characteristics with a selected image object to be printed by said printer;

wherein a printer-independent print-quality characteristic comprises instructions for indicating a feature of an image element that is to be preserved during rendering without specifying any printer-specific imaging actions needed to achieve the feature; and

a printer control device for retrieving the printer-independent print-quality characteristics and for associating printer-dependent imaging actions with the printer-independent print-quality characteristics;

wherein printer-dependent imaging actions associated with the printer-independent print-quality characteristic comprise specific imaging actions taken by the printer to achieve the feature of the image element to be preserved during rendering.

Rejections Appealed

The Examiner rejected claims 1-13 under 35 U.S.C. § 103 as being unpatentable over Smith in view of PCL 5 Color Technical Reference Manual.

Evidence

The following evidence was relied upon by the Examiner:

Smith US 5,704,021 Dec. 30, 1997

PCL 5 Color Technical Reference Manual (Hewlett-Packard, Ed. 1) (Sept. 1994).

Appellant does not separately argue the rejected claims, thus we group all of the rejected claims together.[1] We take claim 1 as representative of the claims on appeal. See 37 C.F.R. § 41.37(c)(1)(vii).

ISSUES

Issue 1: The issue involves whether Smith teaches or suggests a printer-independent print-quality characteristic as recited in claim 1.

PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellant to overcome the prima facie case with argument and/or evidence. *Id.* On appeal, Appellant bears the burden of showing that the Examiner has not established a legally sufficient basis for combining the teachings. Appellant may sustain this burden by showing that, where the Examiner relies on a combination of disclosures, the Examiner failed to provide sufficient evidence to show that

[1] While Appellant includes a separate heading for claim 13 (Br. 10), Appellant does not make arguments specific to limitations recited in claim 13 and restates arguments made for claim 1.

one having ordinary skill in the art would have done what Appellant did. *United States v. Adams*, 383 U.S. 39, 47 (1966); *In re Kahn*, 441 F.3d 977, 987-88 (Fed. Cir. 2006); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick, Co.*, 464 F.3d 1356, 1360-61 (Fed. Cir. 2006).

The Examiner's articulated reasoning in the rejection must possess a rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d at 988.

"[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR Int'l Co. v. Teleflex Inc.,* 127 S.Ct. 1727, 1740 (2007).

> For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson's-Black Rock* are illustrative – a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id.

FINDINGS OF FACT (FF)

1. Appellant defines printer-independent print-quality characteristics as follows:

> Printer-independent print-quality characteristics guide the imaging compromises made by a printer without specifying exact imaging choices such as the use of a particular halftone, color-matching table, black ink treatment, compression, etc. Thus a printer independent print-quality characteristic expresses a goal ("sharp

> edges") for an image element which stays the same from printer to printer, but the specific imaging actions taken to achieve the goal may vary from printer to printer and from media to media depending on the printer/media characteristics.

(Spec. 4: 19-25).

2. Appellant also provides examples of printer-independent print-quality characteristics:

> Examples of printer-independent print-quality characteristics include "make sharp edges", "reduce mottle", "distinguish neighboring colors", "reduce moire", "distinguish tone and edges", "maximum tone depth", "perceptual colors", "contour", "no abutting corners", "increase moire", "uniform gloss", "distinctness" and "compress without loss of detail". Many other printer-independent print-quality characteristics may be defined.

(Spec. 7: 21-26).

3. Appellant describes mapping of printer-independent print-quality characteristics to printer dependent imaging actions as follows:

> *By mapping an object descriptor (e.g., type, size, color, location, etc.) to printer independent print-quality characteristics*, users with absolutely no experience in the particular printing system being used are still able to intelligently apply their knowledge of the document to improve rendering over a printer's default settings.

(Spec. 9: 17-20) (Emphasis supplied).

> *A printing system that uses printer-independent print-quality characteristics to guide printer-dependent imaging actions...will then provide an automatic mapping*, with manual intervention as necessary, to map the printer-independent print-quality characteristics to a specific set of imaging actions (color transforms, halftones, compression methods, black generation methods, etc.) which will be

> taken to implement the printer-independent print-quality characteristic. This mapping may also take into account the media or media-type that is being requested for printing the document.

(Spec. 10: 21-27) (Emphasis supplied).

4. Smith's printer system can be employed with "any of a great variety of present and future color-matching operating-system/printer environments." (Col. 6, l. 67 to col. 7, l. 3). Smith's system is employed in commercially available printer models from the Hewlett Packard Company (i.e., DJ 1200/C and PJ XL 300) (col. 6, ll. 59-64).

5. Smith discloses several color control options 60-99 such as "Print Color Control" 81 ("No Adjustment" 84, "Accurate Screen Match" 83, "Vivid Color" 82), "Printer Quality" ("High" 66, "Normal" 67, "Fast" 68), "Halftoning" 91-93, Lightness" 96 (Figs. 4-9). The options 60-99 are located in the user interface (Fig. 1). Generally, each option controls the selection of a corresponding color map or half-tone map that processes input RGB (red, green, blue) color data from a monitor. For example, the "Vivid Color" option is a control input for selecting a specific "Vivid Color" map that processes RGB data. The output RGB data of the Vivid Color map ultimately (after other processing) is input to a printer to create a printout. (Figs. 5, 8, 9; col. 1, ll. 55-67).

6. Appellant discusses problems with prior art systems as follows:

> Second, since this user interface maps object types to printer dependent processes, it requires expert knowledge by the user of the printing response for every printer used and every media desired to be used. Most users are not familiar with the response of each printer to printer-dependent imaging action combinations to effectively improve

> quality. Deciding the low-level color processing combinations to use to get the best results for each object type demands that users have intimate, expert knowledge of a particular printing system and its responses to all combinations of the low-level color processing choices presented. *Even if the user is experienced, the problem is compounded in a networked printer environment, where a file could be sent to any of a number of different color printers*. To get optimal quality from all the printers no matter which one is used, a user must now have intimate knowledge of the effect of image processing action combinations on each of the printers on the network.

(Spec. 3: 12-23)(Emphasis supplied).

ANALYSIS

Appellant argues that Smith does not disclose printer-independent print-quality characteristics (Br. 8). The Examiner contends that Smith discloses printer-independent print-quality characteristics at Fig. 5 (Ans. 3). We determine the Examiner's position to be correct.

Smith discloses several manual color options 81 which include "Vivid Color," "Match Screen," and "No Adjustment" (FF 5) and which the Examiner contends meets the limitation in dispute (Ans. 2). Smith's system is commercially available in two printers and can be employed with "any of a great variety of present and future color-matching operating-system/printer environments." (FF 4).

Appellant argues that "Vivid Color" "sound[s] like something that might be a printer-independent print-quality characteristic… [but] clearly is not." (Br. 10). Appellant attempts to distinguish Smith's "Vivid Color" option on the basis that it is a "short hand designation for a particular color map that would be of interest to the experienced user" (Br. 10).

We are not persuaded by Appellant's argued distinction. We determine for reasons that follow that Smith's "Vivid Color" and other color options 81 cited by the Examiner are printer-independent print-quality characteristics meeting the claim limitations in dispute.

Appellant's argument that Smith's "Vivid Color" option employs a color map rendering it a printer dependent quality (Br. 10) is not persuasive because Appellant also uses maps "to map the printer-independent print-quality characteristics to a specific set of imaging actions" (FF 3). While a color or half-toning map itself may be printer-dependent as Appellant argues[2], the "Vivid Color" option itself is not a map. The option is a guide pointing to a "Vivid Color" map. Our determination here is also consistent with Appellant's disclosed system which "*uses printer-independent print-quality characteristics to guide printer-dependent imaging actions.*" (FF 3).

Smith's options are also generic to different printer systems since other systems use the same options (FF 4).[3] For example, for any such

[2] Appellant's argument is based on the premise that a color map is "a specific process (color map) for that printer." (Br. 8). The premise is only correct in terms of quality optimization; each color map or driver processes data to optimize it for a specific printer (see Smith, col. 2, ll. 35-39, FF 5, 6). On the other hand, different printers use some of the same color maps even though the quality may suffer as Appellant's admissions imply (i.e., different printers in a network process the same print instructions causing quality to suffer (FF 6)). For purposes of this appeal, we need not decide if Smith's color maps are printer-dependent or printer-independent as we affirm on other grounds.

[3] We also determine Smith's Figs. 5-9 to depict or represent generic printer-independent systems because they are used in different printer systems. (FF 4). We are cognizant that the "common print dialog" ("Print Setup") screen 70 (Fig. 4) specifies a certain printer as a default printer, but different printers can be selected in screen 70 (Smith, col. 7, ll. 4-11; Fig. 4). Also,

different printer system, selecting Smith's "Vivid Color" option (Fig. 5) renders the instruction "VIVID COLOR" at the output of flow control box 23 (Fig. 8), which designates that a "Vivid Color" map 82 is to be used to process RGB color data (Figs. 8-9; col. 9, l. 64 to col. 10, l. 2)[4]. We similarly find that each of Smith's other instructions (see list at FF 5) are generic printer-independent print-quality characteristics which, if selected, control the selection of specific maps or programs (which process RGB inputs and create RGB outputs recognized by different printers) (col. 7, ll. 16-60, col. 8, ll. 11-52; Figs. 1, 5-9; FF 4, 5; n. 4 above).

Our determination that Smith's generic control instructions are printer-independent is consistent with Appellant's definition of printer-independent. That is, Appellant states "a printer-independent print-quality characteristic expresses a goal ("sharp edges") for an image element which stays the same from printer to printer, but the specific imaging actions taken to achieve the goal may vary from printer to printer and from media to media depending on the printer/media characteristics." (FF 1). Similarly, Smith's generic control instructions (i.e., "Vivid Color" "Match Screen,"

while the "Print Color Control" dialog screen 80 in Fig. 5 is accessed after a specific printer driver is accessed in screen 70 (see Fig. 4), the generic control options 80-99 (i.e., including color options "No Adjustment" 84, "Accurate Screen Match" 83, "Vivid Color" 82, etc.) accessed at screen 70 are not located in the printer driver 32, but, rather, in the user interface (Fig. 1) (FF 5).

[4] Color monitors are based on red, green and blue (RGB) pixels which become RGB data inputs to color maps, and other half-tone or lightness processing maps used in the printer system to process the RGB data for ultimate input to the printer. The processed data is used to control the cyan, magenta, yellow and black color inks in printers. (Smith, col. 1, ll. 55-67; col. 5, ll. 52-62, col. 8, ll. 1-67, see also FF 5, Fig. 9).

"No Adjustment," etc. see FF 5 above) each express a goal ("Vivid Color", etc.) for an image element which stays the same from printer to printer, even though the specific imaging actions (i.e., different color maps specific to a printer) may vary from printer to printer. Thus, we determine that Smith's generic instructions are printer-independent print-quality characteristics meeting the claim.

Appellant also argues that his "printer-independent print-quality characteristics, such as 'make sharp edges'…do not of themselves specify any printer-specific imaging actions needed to achieve the feature or characteristic," while Smith's options "tell the printer how to do this," thus the claim limitation "rendering without specifying any printer-specific imaging actions" is not met (Br. 8-9). Appellant's argument is premised on his same reasoning employed above - that since Smith's generic options are associated with a specific color map, the options are not printer-independent (and therefore specify printer-specific imaging actions). (Br. 8-9).

Accordingly, we are not persuaded by Appellant's argument for reasons similar to those we outlined above. That is, a generic option such as "Vivid Color" itself does not specify printer-specific imaging actions, even assuming arguendo that the specific map controlled by the option is printer dependent (see n. 2 above). The option itself, as indicated above, is merely a guide pointing to one of the three possible map options (i.e., "No Adjustment," "Accurate Screen Match," or "Vivid Color") (Smith, Fig. 8, see logic box 23).

Appellant's argument that a user selecting the generic options of Smith's Fig. 5 is making selections tied to a specific printer in Fig. 4 (Br. 8-

9) boils down to an argument that because a specific printer is selected first, the generic options associated with that printer are printer-dependent. We do not find the argument persuasive for reasons that follow.

Claim 1 requires "a user interface having a first option for associating printer-independent print-quality characteristics with a selected image object to be printed by said printer [which] comprises instructions…to be preserved during rendering without specifying any printer-specific imaging actions." This apparatus claim does not require a printer to be selected after the instructions. As noted above, Smith's "User Interface" module has generic options 60-99 (Fig. 1) (i.e., "No Adjustment" 84, "Accurate Screen Match" 83, Vivid Color" 82) (Fig. 1, FF 5). We determine that these generic options meet the limitation of "a first option for associating…print-quality characteristics" as claimed. We also determine that because the generic options 60-99 are not located in Smith's printer drivers 32 (Fig. 1), they also meet the limitation of "without specifying any printer-specific imaging actions."

That is, Smith's generic control options 60-99, located in the "User Interface" module, exist independent and apart from the "common print dialog" ("Print Setup") dialog box 70 (which is used to select a specific printer driver 32) (Figs. 1, 4). Accordingly, each generic control option can be selected no matter which printer is selected, rendering all generic options independent of a specific printer.[5] Therefore, as each of Smith's printer

[5] We also note that after one of Smith's generic control options (i.e., print-quality characteristics 82-84) are selected (Fig. 5), a user can return to the "common print dialog" "Print Setup" box 70 to select a different printer (Fig. 4). While it is not clear if a previously selected generic control option

drivers allow for the same choice of generic control options (and the options are only guides to specific maps), the control options do not specify a specific printer driver (and printer). Consequently, Smith's generic option's are printer-independent and do not specify any printer-specific imaging actions.[6]

Moreover, meeting claim 1, an apparatus claim, does not require one of Smith's generic control options to be selected. Consequently, since Smith's control options do not cause any imaging action to occur unless and until an option is selected (thus causing a particular color map to be selected), we determine that the option itself does not specify a printer-specific imaging action.[7] Again, our determination is consistent with

82, 83 or 84 is preserved after a later selection of a different printer, we determine that such a modification would have been an improvement yielding no more than the predictable result of eliminating otherwise extra steps of inputting redundant generic control data each time a different printer is selected. Further, the generic designation of Smith's dialog box (i.e., "common print dialog" and "Print Setup" (see n. 3 above), implies or suggests the continued storing of data common to all printers. We determine that this proposed modification of Smith, if it is a modification, also would render the control options 82-84 to be printer-independent – and without specifying printer-dependent actions - meeting the disputed claim limitation.

[6] We analogize the situation to a rule requiring one to choose a sandwich before a condiment. That is, choosing a hotdog or hamburger and then choosing catsup or mustard does not mean that the choice of the condiment is sandwich specific.

[7] We also note that even without Smith's generic options (i.e., either not selected or nonexistent), a color or text document on Smith's color monitor (or any prior art monitor), created prior to a generic print request (and not having color matching software to match the print monitor color to the printer), contains printer-independent print-quality characteristics meeting the claim limitations in dispute (since no printer is as yet selected in this scenario), and the colors/sizes of objects/text constitute first options for

Appellant's disclosure: In both Smith's and Appellant's systems, before the print-quality choice is selected, no printer-specific actions are specified; and on the other hand, after the print-quality choice is selected, the specific printer dependent maps are implemented. (In other words, just as in Appellant's system, a user of Smith's system need not know which specific printer imaging actions (i.e., half-tone, etc.) to select or how to achieve a desired goal (see FF 1); he or she need only choose a desired goal, (i.e., print-quality characteristic "Vivid Color" – Smith's characteristic, "perceptual color" – Appellant's characteristic (see FF 2)).

Consequently, Smith's option "Vivid Color," selected or unselected, located in a user interface separate from the printer driver 32, constitutes a "printer-independent print-quality characteristics [which] comprises instructions…to be preserved during rendering without specifying any printer-specific imaging actions to be printed." We therefore determine that Smith's generic instructions or documents within Smith's system (see n. 7 above) meet the claim limitations in dispute.

For claim 13, Appellant argues that "[n]othing in Smith . . . teaches or suggests, or even mentions, printer-independent, print-quality characteristics, such as 'make sharp edges', 'reduce mottle'… 'perceptual colors'…as claimed by Appellant, all of which have meaning to an inexperienced [sic]." (Br. 10).[8] This argument is similar to Appellant's

associating a printer-independent print-quality characteristics of color and/or size. Any generic later-selected printer and/or print driver meet the remaining print control device limitations of the claim. (See Smith, col. 2, ll. 1-45).

[8] We do not interpret Appellant's argument to be that one of the specific recitations of the thirteen different print quality characteristics recited in

claim 1 argument that Smith's printer options "would have little meaning to an inexperienced user" (Br. 8). The arguments lack any factual foundation. We find that users of ordinary skill, whether experienced or inexperienced, would have little trouble understanding Smith's generic options (i.e., "Vivid Color," "No Adjustment," or "Accurate Screen Match") based upon the common ordinary meanings of the options. Further, Appellant's claims do not require an inexperienced user.

We accordingly sustain the Examiner's rejections of claims 1 and 13. We also sustain the rejections of claims 2-12 since Appellant did not present separate arguments for those claims.

CONCLUSION

Appellant fails to meet the burden of asserting error in the Examiner's rejection. *See United States v. Adams*, 383 U.S. at 47 (1966); *In re Kahn*,

claim 13 (i.e., "'make sharp edges', …'perceptual colors'") must be disclosed by Smith to meet the claim. Even if that were Appellant's argument, we determine that Smith's "Vivid Color" option meets claim 13 for two reasons. First, we determine that "Vivid Color" is a "characteristic" that comprises at least one of "perceptual colors", "distinguish neighboring colors" or "make sharp edges", since the "Vivid Color" option creates perceived colors, distinguishes neighboring colors, and makes sharp edges (i.e., at least to a degree). Second, using different text nomenclatures to represent the same characteristic would not alter the claimed process over what it otherwise entails. For example, selecting the characteristic "perceptual color" would not alter the claimed process over what it would entail otherwise for the same characteristic having a different nomenclature (such as "Perceptual Color" or "Vivid Color" for example). No distinction can be based on the specific textual nomenclature choice because different nomenclatures that accomplish the same physical result constitute nonfunctional descriptive material. Nonfunctional descriptive material cannot render nonobvious an invention that would have otherwise been obvious. *In re Ngai,* 367 F.3d 1336, 1339 (Fed. Cir. 2004).

441 F.3d at 987-88 (Fed. Cir. 2006); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick, Co.*, 464 F.3d at 1360-61 (Fed. Cir. 2006). Based on the arguments made in the Brief, we have no basis for questioning the findings of the Examiner. Appellant has not sustained his burden on appeal of showing that the Examiner erred in rejecting the claims on appeal as being unpatentable under 35 U.S.C. § 103(a).

Accordingly, we sustain the Examiner's rejections of claims 1 and 13. Appellant have not separately argued claims 2-12. Therefore, we also sustain the Examiner's rejection of claims 2-12.

DECISION

The decision of the Examiner is *affirmed.*

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

tdl/gvw

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Xerox Corporation

Xerox Square 20th Floor
100 Clinton Ave. S.
Rochester NY 14644